

## REMARKS

This Amendment responds to the Office Action mailed on May 25, 2005. In the Office Action, the Examiner:

- rejected claims 1-6 and 9-11 under 35 U.S.C. § 102(b) as being anticipated by Freitag *et al.* (U.S. Patent No. 3,909,495) or GB 1,079,909;
- rejected claims 7-8 under 35 U.S.C. § 103(a) as being unpatentable over Freitag *et al.* or GB 1,079,909; and
- withdrew claims 12-25 from consideration.

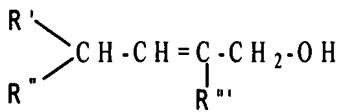
The Applicant would like to express gratitude to the Examiner for the courtesy extended to the Applicant's attorneys during a telephone interview on August 2, 2005. The patentability of the rejected claims in light of the cited references was discussed. But no agreement was reached.

Claim 1 is amended to more specifically define and distinctly claim the subject matter by defining the term "unsaturated dihydroxy compound" with a formula. The amendment is supported by the specification, for example, in paragraph [19] at page 7. No new matter is added by this Amendment. After entry of this Amendment, the pending claims are: claims 1-11.

### **Response to Rejections Under 35 U.S.C. § 102(b)**

Claims 1-6 and 9-11 were rejected under 35 U.S.C. § 102(b) as being anticipated by Freitag *et al.* (U.S. Patent No. 3,909,495) or GB 1,079,909. The Examiner indicated that (1) Freitag *et al.* discloses a process for the production of resols by the condensation reaction of formaldehyde with a condensation resin obtained by reacting a mixture of an unsaturated dihydroxy compound such as dihydroxy-diisopropyl benzene with a phenolic compound; and that (2) GB 1,079,909 discloses a resin obtained by reacting an aldehyde component with a phenolic compound consisting of phenol and a dihydroxy benzene.

Claim 1 is amended to more specifically define and distinctly claim the subject matter by defining the term "unsaturated dihydroxy compound" as an aliphatic unsaturated dihydroxy compound having the formula:



where R', R'', and R''' are individually a hydrogen or an aliphatic straight or branched alkyl, provided that R' and R'' cannot both be hydrogen at the same time, and that one of R' and R'' is or includes an OH group.

The dihydroxy-diisopropyl benzene of Freitag *et al.* or the dihydroxy benzene of GB 1,079,909 are aromatic unsaturated dihydroxy compounds and not aliphatic unsaturated dihydroxy compounds as represented by the above formula because the unsaturations of both dihydroxy-diisopropyl benzene and dihydroxy benzene locate in the aromatic phenylene ring. Furthermore, neither Freitag *et al.* nor GB 1,079,909 discloses the use of aliphatic unsaturated dihydroxy compounds as represented by the above formula in the production of phenolic resins. Therefore, the currently amended claim 1 is not anticipated by either Freitag *et al.* or GB 1,079,909 because the cited references do not disclose all elements of claim 1, particularly the element of the aliphatic unsaturated dihydroxy compounds as represented by the above formula. Because claims 2-6 and 9-11 depend on claim 1, they are also not anticipated by the cited references as well.

In view of the above comments, Applicants respectively request withdrawal of the rejections of claims 1-6 and 9-11 under 35 U.S.C. 102(b) as being anticipated by Freitag *et al.* (U.S. Patent No. 3,909,495) or GB 1,079,909.

#### **Response to Rejections Under 35 U.S.C. § 103(a)**

Claims 7-8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Freitag *et al.* (U.S. Patent No. 3,909,495) or GB 1,079,909. The Examiner indicated that the references disclose a resin obtained by contacting one or more phenolic compounds with an unsaturated dihydroxy compound in the presence of an acid catalyst before reacting with an aldehyde. The Examiner has also admitted that the cited references do not disclose the claimed unsaturated dihydroxy compound which is 1,4-dihydroxy-2-butene nor specific structures in claim 8. However, the Examiner asserted that because the 1,4-dihydroxy-2-butene is included in the claimed unsaturated dihydroxy compound, it would have been obvious to one of ordinary skill in the art to select the phenolic component and the unsaturated dihydroxy component from the references having the same or similar

functionality with the claimed 1,4-dihydroxy-2-butene to form the products of the formulae in claim 8.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness because the prior art references, individually or in combination, fail to teach or suggest all the claim elements of claims 7-8.

Claim 1 is amended to more specifically define and distinctly claim the subject matter by defining the term “unsaturated dihydroxy compound” as an aliphatic unsaturated dihydroxy compound having the formula as shown above. Applicants respectfully submit that the cited references, individually or in combination, do not disclose all the claim elements of currently amended claim 1, particularly that element of the **aliphatic** unsaturated dihydroxy compounds as represented by the formula above, because the dihydroxy-diisopropyl benzene of Freitag *et al.* or the dihydroxy benzene of GB 1,079,909 are not **aliphatic** unsaturated dihydroxy compounds for the reasons mentioned above. Therefore, claim 1 and claims 7-8, which depend on claim 1, are not obvious over Freitag *et al.* (U.S. Patent No. 3,909,495) or GB 1,079,909.

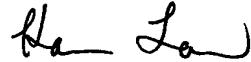
In view of the above comments, Applicants respectfully request withdrawal of the rejections of claims 7-8 under 35 U.S.C. 103(a) as being unpatentable over Freitag *et al.* (U.S. Patent No. 3,909,495) or GB 1,079,909.

## CONCLUSION

In light of the above amendments and remarks, the Applicant respectfully requests that the Examiner reconsider this application with a view towards allowance. The Examiner is invited to call the undersigned attorney at 858-314-1123, if a telephone call could help resolve any remaining items.

Respectfully submitted,

Date                  August 16, 2005



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